ARES, NTS, NTSD
The scary monsters

National Traffic System (NTS), (NTSD) , WL2K System & ARES

A Introduction

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Pacific Area Digital Coordinator NTSD

Pacific Area Digital Hub

Member ARRL/NTS Winlink Committee

TCC Rep Cycle 1 & 2

NCS Pacific Area Net (PAN)

NCS Region 7 net (DRN7)

NCS Noon time net 3970Khz

Washington traffic Rep

Updated Jan 2013

Questions

- Questions ??
- I have Questions ??
- I know you have Questions ??

- Hopefully I can answer Some
- Dispel Some
- Correct Some

National Traffic System (NTS) Messaging Basics

Outline

- What is the National Traffic System?
- Advantages of NTS Messaging
- NTS Hierarchy and modes
- The ARRL Radiogram Form
- ARL Abbreviated Texts
- How to Deliver an NTS Message
- NTS Digital
- Local NTS Contacts & Nets
- Additional Resources

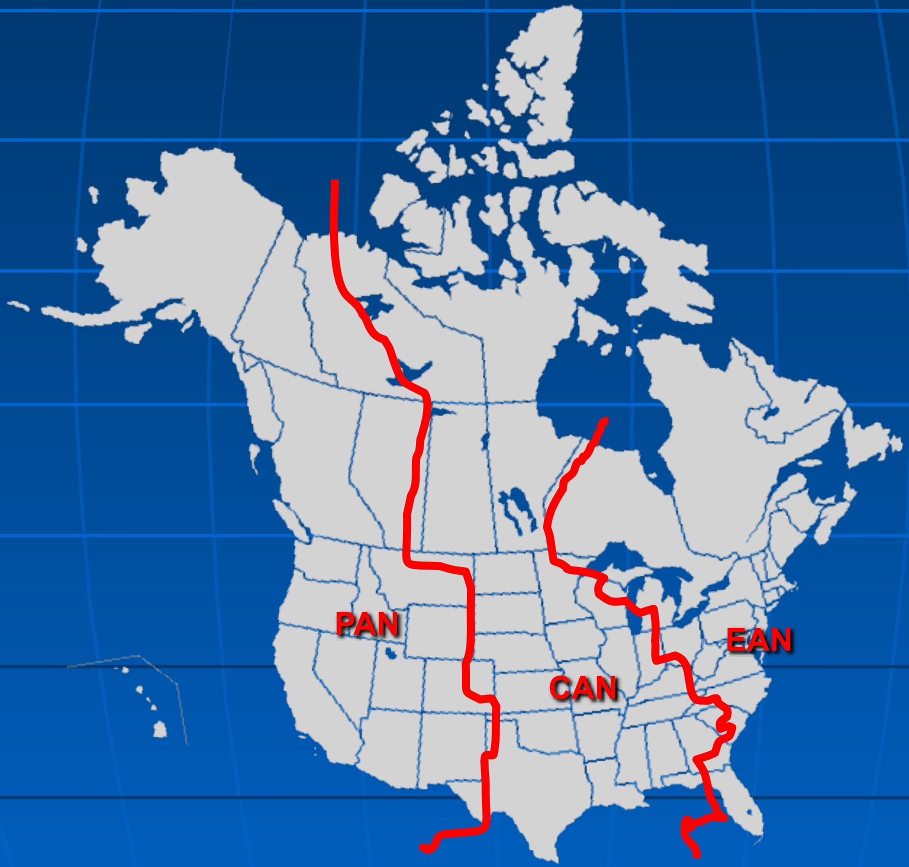
What is the National Traffic System (NTS)?

- The “RELAY” in American Radio Relay League (ARRL)
- Started in 1915 as the formal ARRL system to relay messages around the country
- Transmit & Receive Modes: Voice, CW, Digital
- NTS and Amateur Radio Emergency Services (ARES)
- Requirements to join: Any level Ham license & interest
- ARRL Field Organization Appointments: Official Relay Station (ORS), Digital Relay Station (DRS) & Section Traffic Manager (STM), Area Digital Coordinator (ADC), Area/Regional MBO/Hub.

Advantages of NTS Messaging

- Wireless! Send them from anywhere.
- Use a little HT or a big base station
- Standard Format
- Accountability
- NTS Nets meet daily
- Speed (digipeater vs. email)
- *When all else fails…*
- Fun, good practice & helpful!

NTS Areas



NTS/NTSD National Messaging, Section, Region, Area

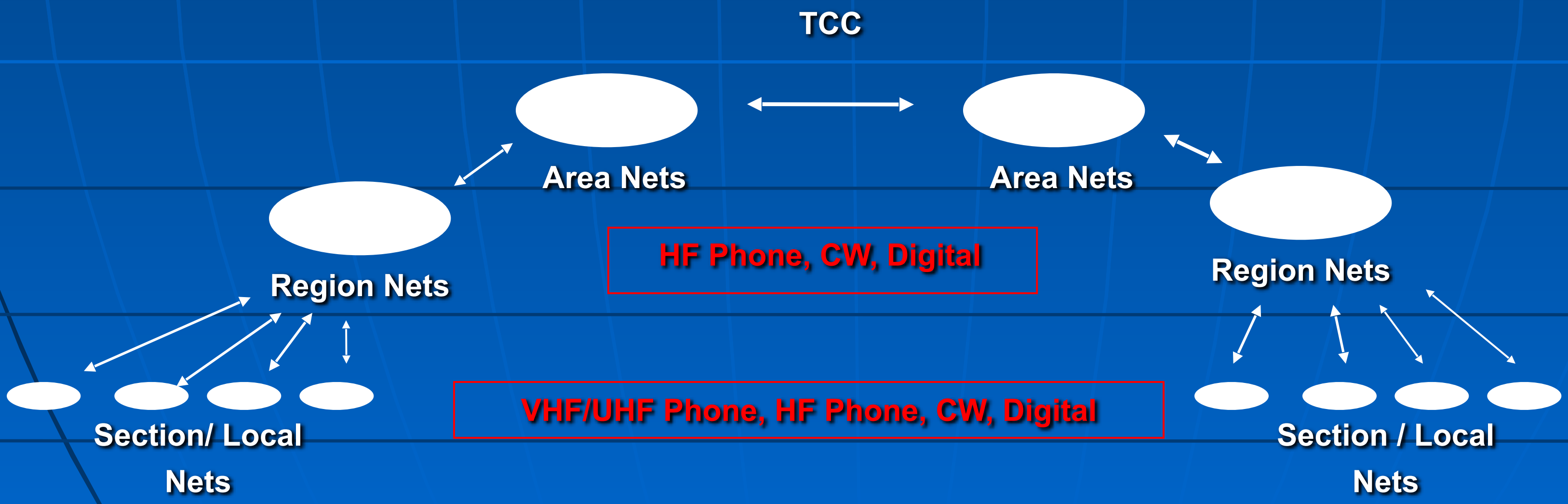
The current resources of the manual NTS system and NTSD shall be preserved as a fundamental backup system for national messaging.

The scope of these communications are being dramatically enhanced by the addition of;

Radio-email services

NTS Hierarchy and Modes

- US and Canada organized into Area, Region, and Local Nets
  - 3 Areas
  - 12 Regions
- Traffic Flow:



TCC

Area Nets

Area Nets

Region Nets

HF Phone, CW, Digital

Region Nets

Section/ Local Nets

VHF/UHF Phone, HF Phone, CW, Digital

Section / Local Nets

ARES & NTS COMMUNICATIONS

The NTS manages a schedule of manual nets at Area, Region and Section/Local level to move formal NTS text Radiograms nationally. These NTS manual nets meet periodically or continuously as warranted by the nature of an ongoing emergency.

So Whats been missing mostly !

At Section level the NTS nets and operators interfacing directly with ARES® stations and provide in-Section messaging support.

ARES Communications Layer

All of the ARRL Sections provide ARES® communications through interfaces with government and private relief organizations.

The means include, but are not limited to:Tactical voice communications to/from fixed and field sites;

Formal ARRL Radiogram text messaging to/from fixed and

field sites ;APRS/GPS, Echolink, IRLP, ATV, TCP/IP, mesh, D-Star,

and other digital services; Packet radio digital text messaging and keyboard chat.

The NTS/NTSD can provide Section level and Section-to-Section messaging. These services, taken in their entirety are the interface to ICS/NIMS via the Logistics Section or ACS.

The scope of these communications may be dramatically

enhanced by the addition of Radio-email services.

Lets talk about layer's of communications *ARES, NTS, and NTSD*

Did you know that NTS & NTSD is the traffic arm of ARES, Fact not fiction !

District nets = ARES & ?? mostly Voice

Section nets = ARES & NTS HF Voice nets

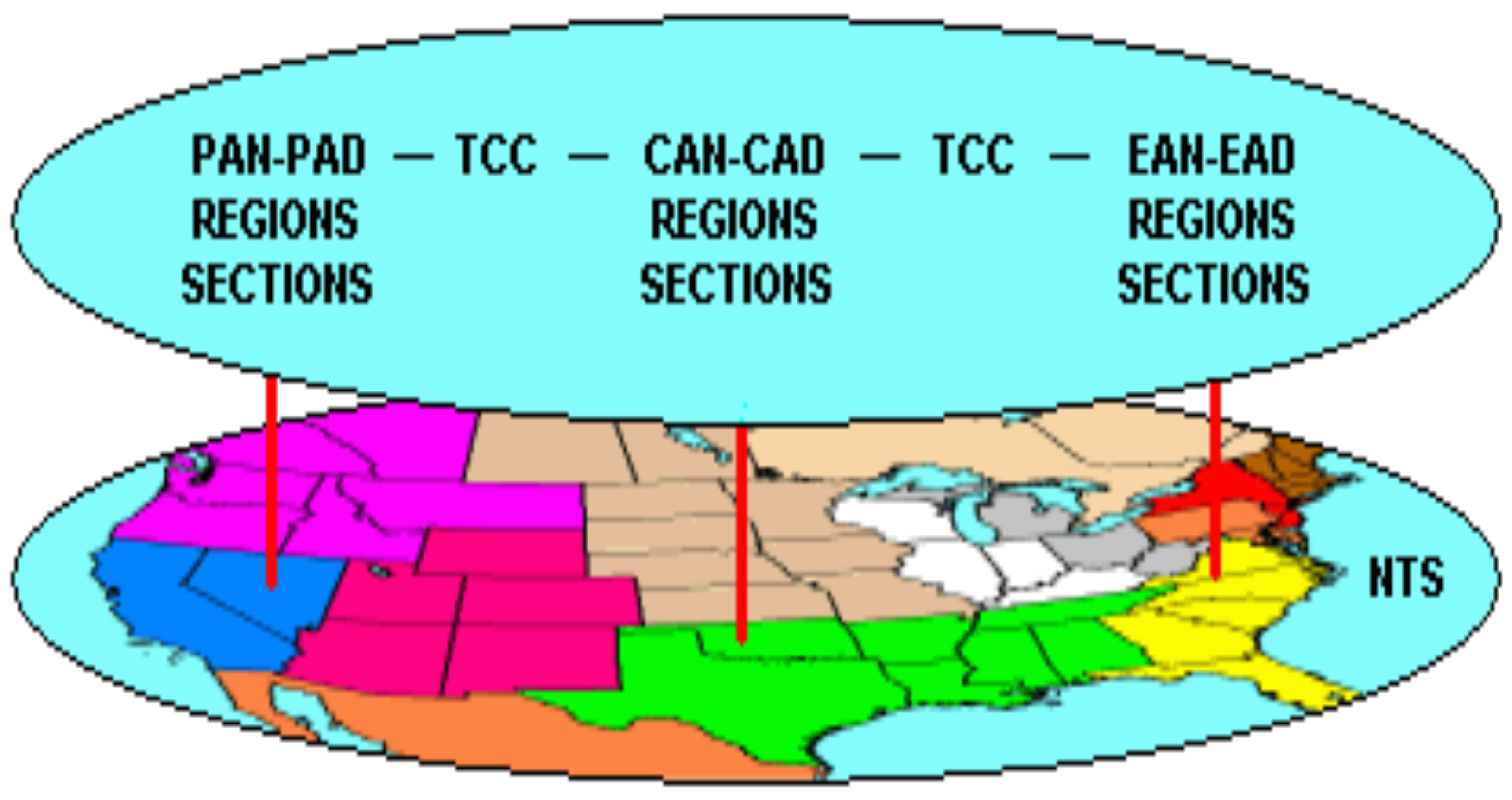
2 AND 6 meters, some digital HF(NTSD)

LOTS OF VHF DIGITAL (non NTSD)

Division nets/Regional nets = ARES/NTS Voice, Some CW and (NTSD)Digital

Area nets = ARES/NTS/TCC Voice, CW, (NTSD) Digital

NTS COMMUNICATIONS

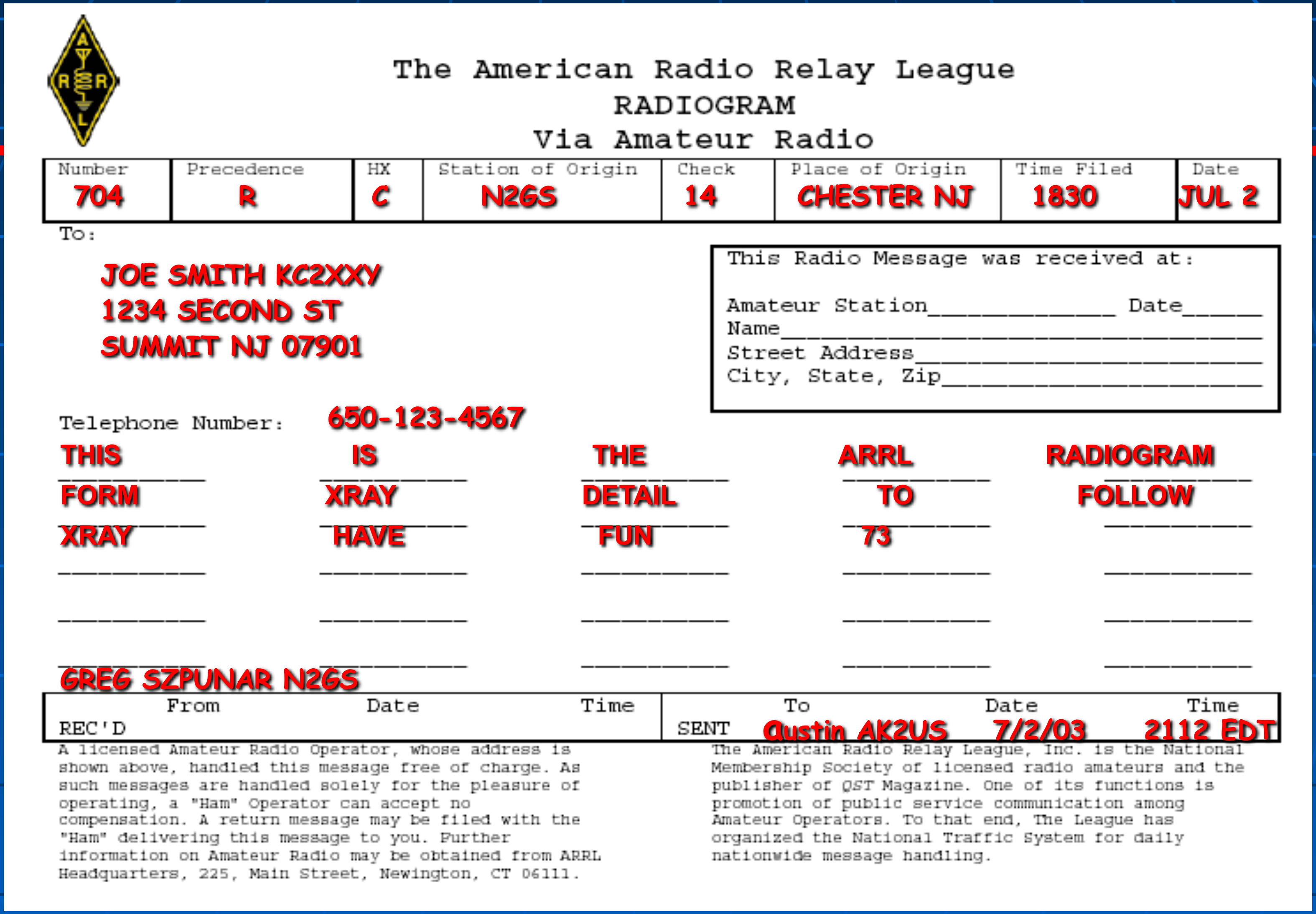


1st let talk about Message Format

The ARRL Radiogram

The basic's

Did you know that the ARRL message form has the same basic information as the FEMA form ICS-213



The American Radio Relay League
RADIOGRAM
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
704	R	C	N2GS	14	CHESTER NJ	1830	JUL 2

To:

JOE SMITH KC2XXY
1234 SECOND ST
SUMMIT NJ 07901

This Radio Message was received at:

Amateur Station______________ Date______
Name____________________________________
Street Address__________________________
City, State, Zip________________________

Telephone Number: 650-123-4567

THIS	IS	THE	ARRL	RADIOGRAM
FORM	XRAY	DETAIL	TO	FOLLOW
XRAY	HAVE	FUN	73	

GREG SZPUNAR N2GS

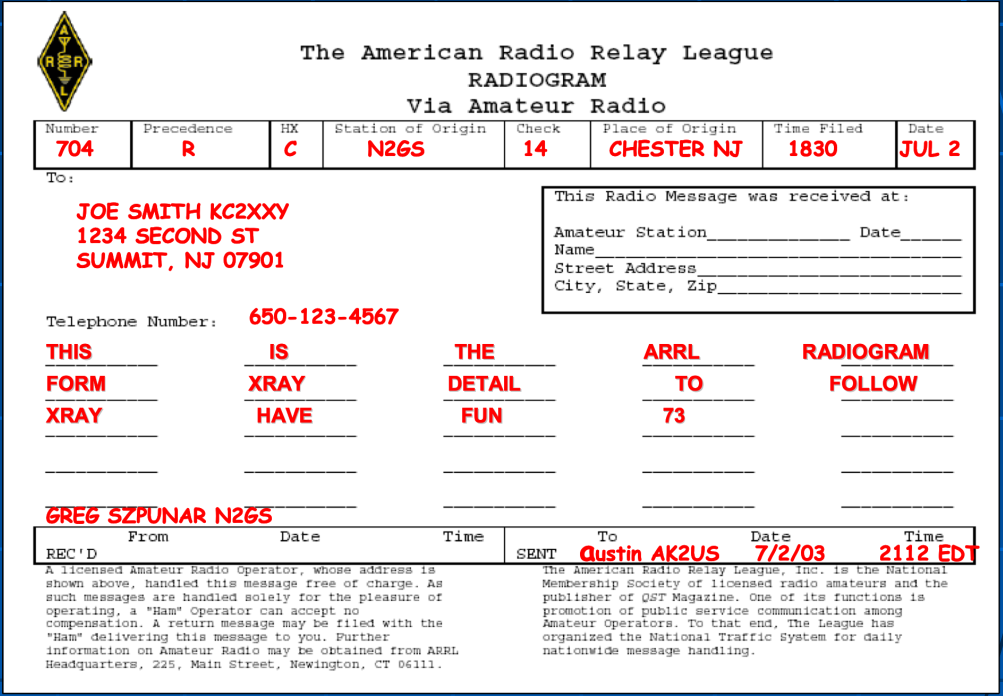
	From	Date	Time		To	Date	Time
REC'D				SENT	austin AK2US	7/2/03	2112 EDT

A licensed Amateur Radio Operator, whose address is shown above, handled this message free of charge. As such messages are handled solely for the pleasure of operating, a "Ham" Operator can accept no compensation. A return message may be filed with the "Ham" delivering this message to you. Further information on Amateur Radio may be obtained from ARRL Headquarters, 225, Main Street, Newington, CT 06111.

The American Radio Relay League, Inc. is the National Membership Society of licensed radio amateurs and the publisher of *QST* Magazine. One of its functions is promotion of public service communication among Amateur Operators. To that end, The League has organized the National Traffic System for daily nationwide message handling.

ARRL Radiogram Form

- **Preamble:** Message number, precedence, HX (optional handling code), station of origin, check (text word count), place of origin, time filed (optional), and date.
- **Addressee:** Name, call sign (if a ham), full street address, city, 2-letter state abbreviation, zip code (very important) & telephone (be sure to include area code).
- **This Radio Message was received at:** Station identification and location.
- **Text:** No maximum for ECOM traffic,
5 words per line, 25 words for general every day traffic 35 words maximum
  Use the word "xray" for a period (.) and "query" for a question mark (?). Last word in salutation (e.g., "73", "Love", etc.)
- **Signature:** (Write-in above REC'D block) Name & call sign of person who wrote the message – include full phone number if not a Ham or if new to NTS.



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Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
704	R	C	N2GS	14	CHESTER NJ	1830	JUL 2

To:

JOE SMITH KC2XXY
1234 SECOND ST
SUMMIT, NJ 07901

Telephone Number: 650-123-4567

This Radio Message was received at:

Amateur Station____________ Date______
Name______________________________
Street Address________________________
City, State, Zip_______________________

THIS	IS	THE	ARRL	RADIOGRAM
FORM	XRAY	DETAIL	TO	FOLLOW
XRAY	HAVE	FUN	73	

GREG SZPUNAR N2GS

	From	Date	Time		To	Date	Time
REC'D				SENT	Austin AK2US	7/2/03	2112 EDT

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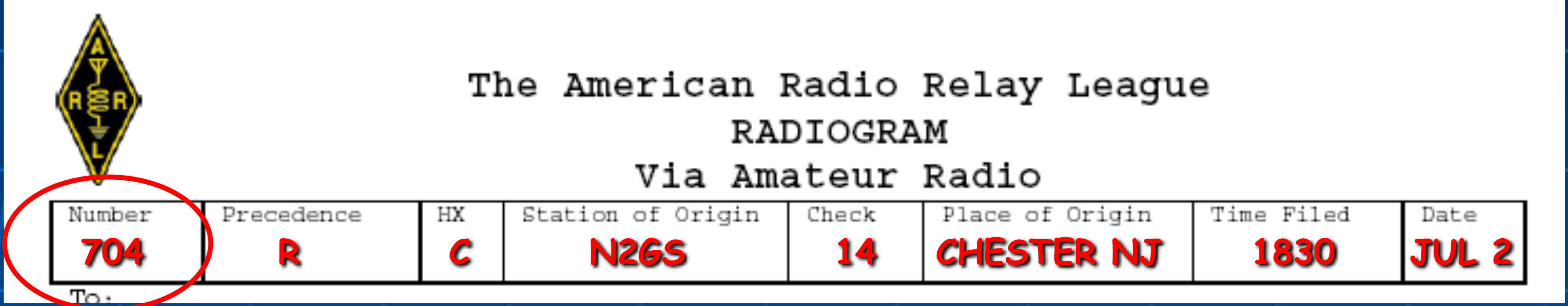
- **REC'D & SENT:** Record the names and call sign of the person you rec'd the message from and/or sent/forwarded the message to, along with the date & time (EST/EDT or Z).

Radiogram Form Detail (1 of 6)



The American Radio Relay League
RADIOGRAM
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
704	R	C	N2GS	14	CHESTER NJ	1830	JUL 2

To:

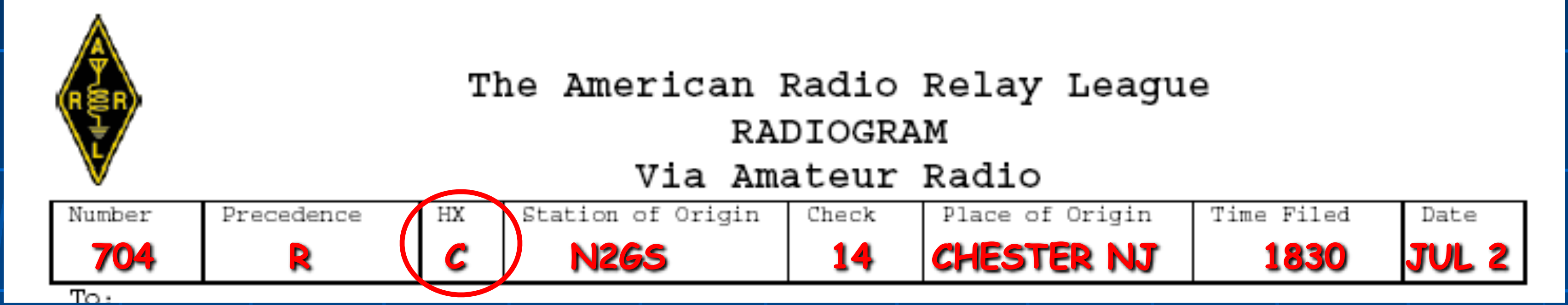
Number

- Assigned by the message originator
- No standard way of numbering messages
- Consecutive (1, 2, 3..., starting over at the new year or monthly)
- Order by month & number (507 = 7th you originated in May; 11244 = 244th message you originated in November

Precedence (Emergency, P, W, or R)

- Emergency (life or death urgency in a declared emergency) always spelled out
- P = Priority (official traffic in a declared emergency)
- W = Health & Welfare (used only in a declared emergency)
- R = Routine (everything else – most frequently used)

Radiogram Form Detail (2 of 6)



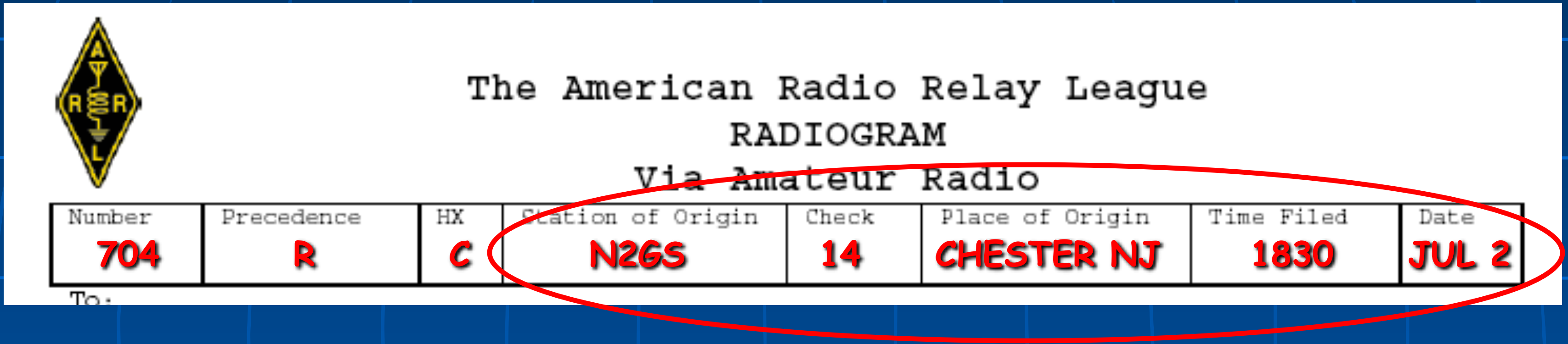
The American Radio Relay League
RADIOGRAM
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
704	R	C	N2GS	14	CHESTER NJ	1830	JUL 2

To:

1. (Optional) HX or Handling Code – A, B, C, D, E, F or G
   - A. Collect landline delivery authorized within ___ miles of addressee or unlimited if blank (A150 = collect call authorized w/in 150 miles; A = collect call authorized regardless of miles)
   - B. Cancel message if not delivered within ___ hours of filing time & service originating station (B72 = cancel if not delivered within 72 hrs and send message to originator to notify them)
   - C. Confirmation of delivery requested by originating station ("TOD YOUR 1014 JULY 4 1330 PST XRAY 73" or if issues "ARL SIXTY SEVEN 1014 PHONE 650 555 1212 INCORRECT NO REPLACEMENT FOUND SENT RADIOGRAM INSTEAD XRAY 73"
   - D. Report your identity & time/date rec'd message plus time/date delivered or sent to another
   - E. Delivering station to get reply from addressee and send to originator as a new message
   - F. Hold delivery until ___ (numbered day of month) – great for birthday or anniversary messages (F14 = deliver on 14th of the month; F1 = deliver on the 1st of month after date filed)
   - G. Delivery by mail or toll call not required, service originating station (often ignored).

Radiogram Form Detail (3 of 6)



The American Radio Relay League
RADIOGRAM
Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date
704	R	C	N2GS	14	CHESTER NJ	1830	JUL 2

To:

1. Station of Origin: Call sign of station who put the message into NTS format; If N2GS prepares message 1207 for a fellow ham, then puts it onto an NTS packet BBS for relay to Vermont, the originator is... N2GS. If WB2W prepares message 23 for his non-ham neighbor then gives it to N2GS to relay to any NTS net, the originator is... WB2W.

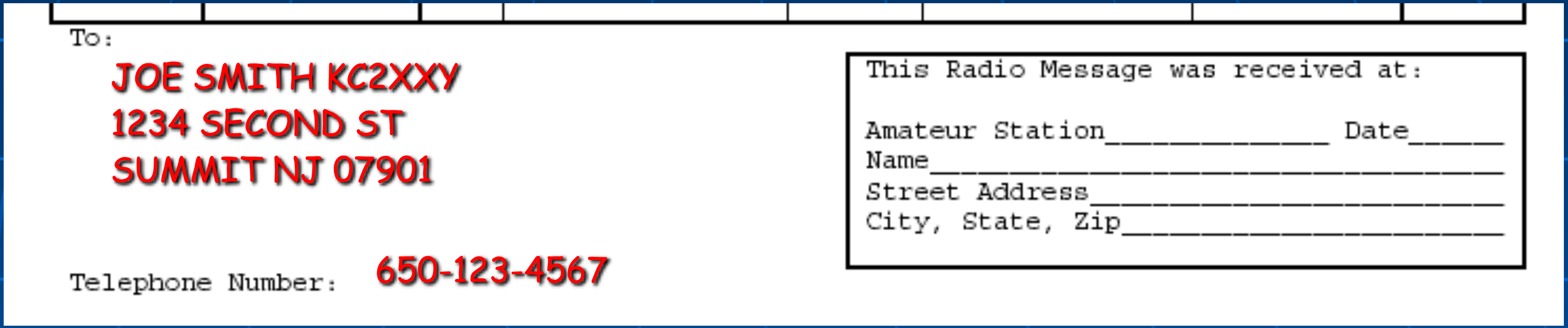
2. Check: The word count in body text only (do not count the address or signature); precede with “ARL” if any of the ARL numbered texts are used (e.g., ARL 7).

3. Place of Origin: The city & state where the message was written.

4. (Optional) Time Filed: This is not used much... 24-hr format & time zone

5. Date: Month (non-numeric – abbreviated) & day number message was created e.g., Sep 21)

Radiogram Form Detail (4 of 6)



To:

JOE SMITH KC2XXY
1234 SECOND ST
SUMMIT NJ 07901

Telephone Number: 650-123-4567

This Radio Message was received at:

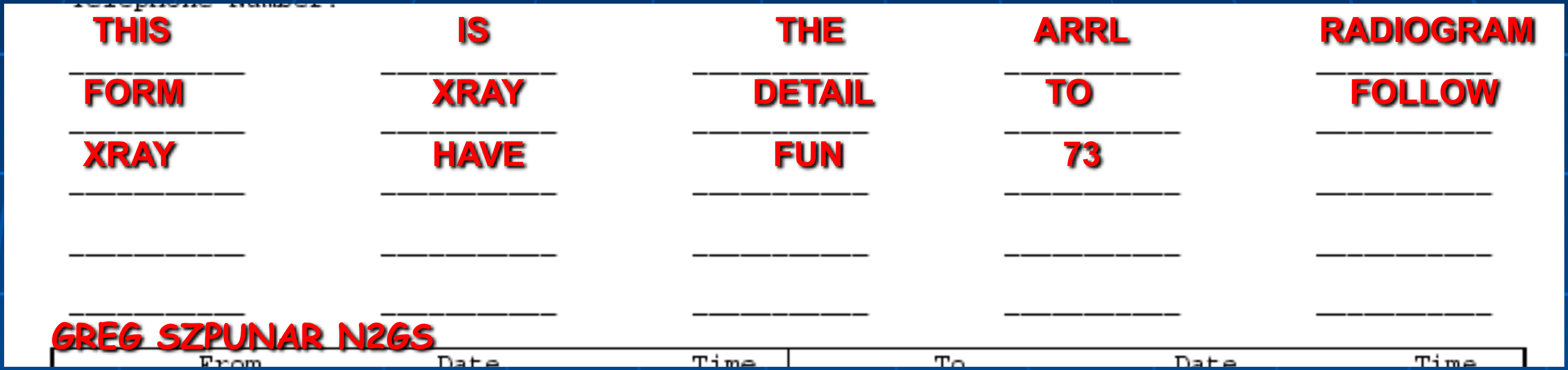
Amateur Station______________ Date______
Name_________________________________
Street Address_______________________
City, State, Zip_____________________

To:
Name, call sign (if going to a ham), street address or P.O. Box, city, state (abbreviated) & zip code. Note: Digital and packet NTS messages are routed via zip code.

Telephone Number:
Be sure to include the area code and double-check the number!!!

This Radio Message was received at:
Your station identification, date received, and your location. More received-from detail will go in the “REC’D” block after body text and signature.

Radiogram Form Detail (5 of 6)



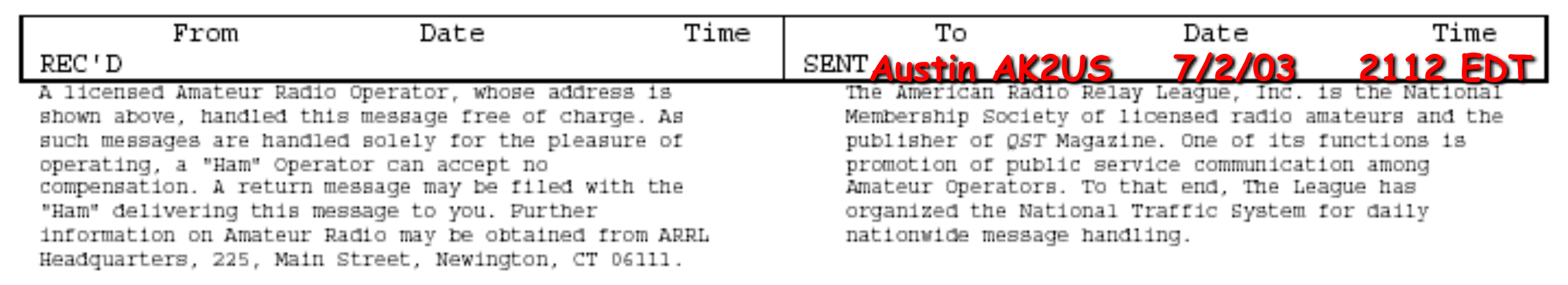
THIS	IS	THE	ARRL	RADIOGRAM
FORM	XRAY	DETAIL	TO	FOLLOW
XRAY	HAVE	FUN	73	

GREG SZPUNAR N2GS

Text: 25 words maximum, 5 per line; Use “xray” for a period (.) and “query” for a question mark (?).

Signature: There is no “Signature” field, just write-in below text; Name & call sign of author – include phone number if not a ham or if not known on an NTS net.

Radiogram Form Detail (6 of 6)



	From	Date	Time
REC'D			
	To	Date	Time
SENT	Austin AK2US	7/2/03	2112 EDT

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REC'D: Call sign from whom you received the message and date & time of receipt. Time may be either your local time (EST/EDT) or Zulu time. Make sure date agrees with time (Zulu is 5 hours ahead of EST – can cause date to roll forward).

SENT: Call sign you sent or passed the message to, or to whom you delivered it, with date & time. Also good to note delivery method for your own reference (i.e., via phone or left on Tom's voicemail). Always leave your call back number if message was left on voicemail!

ARL Numbered Texts

Purpose & How Counted

- ARL Numbered Texts replace common phrases in message body text (i.e., Happy Birthday, Greetings by amateur radio, etc.)
- Use of ARL texts reduce total message word count – faster and more consistent transmission of text
- Translated before delivery of message to addressee
- ARL text numbers are always spelled-out in words (i.e., ARL SEVEN or ARL FORTY SIX)
- Message word count (check) is written as "ARL #" (e.g., ARL 4 or ARL 15) to alert operators that message includes at least one ARL numbered text.

ARL Numbered Texts (Examples)

- ARL FORTY SIX = Greetings on your birthday and best wishes for many more to come.
- ARL FORTY SEVEN = Your message _______ to _______ delivered ________ ________UTC
- ARL FIFTY = Greetings by amateur radio.
- ARL FIFTY ONE = Greetings by amateur radio. This message is sent as a free public service by ham radio operators at ________. Am having a wonderful time.
- ARL SIXTY SEVEN = Your message number ______ undeliverable because of _______. Please advise.

How to Deliver an NTS Message

- Preferred delivery is via telephone.
- Okay to leave on voicemail or answering machine IF you are comfortable you reached the right person.
- Radiogram postcard if cannot reach by phone.
- Service originating station to inform if cannot deliver or if they requested confirmation.

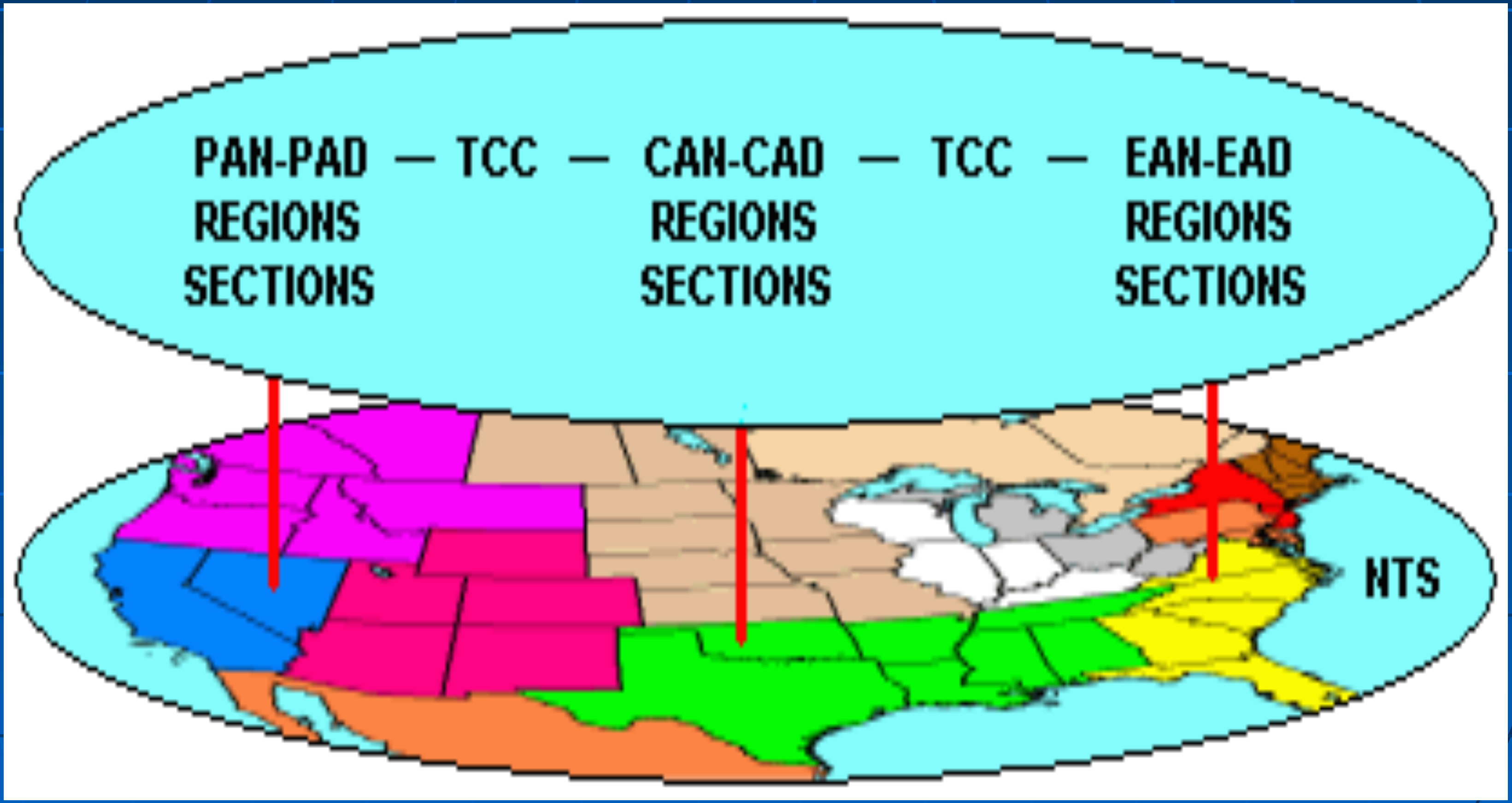
Record Keeping & Reporting (PSHR)

- Use a log sheet to keep track of your messages
- Use a PSHR log sheet to tally monthly points for Public Service Honor Roll
- Report message count (originated, sent, received & delivered) to STM monthly
- Report PSHR totals to STM

Not to Replace Traditional NTS
The *NTSD*

- A Complementary system
- Stations always needed at all levels

NTS/NTSD COMMUNICATIONS



Digital Mode History

- RTTY- After WWII, 5 level Baudot code, mechanical teletypewriters, paper tape storage.
- Noisy
- Signals subject to selective fading and drop out errors.
- Equipment relatively available via surplus route
- Some units as big as a sub-compact car
- AMTOR- Still 5 bit code, but with limited error correction.
- Burst mode-requires fast transmit/receive switching

FCC Authorizes ASCII- late 70's 7 bit code- with some error detection

- HF Packet- 300 baud, Long bursts, error correcting but needing large signal to noise ratio to properly decode
- Net result- Many retries, slows down transfer rate

First integrated system- APLINK (Amtor/Packet Link)

- Bulletin Board System incorporating Amtor on HF with transfer of data to VHF Packet
- Highly successful but suffers from selective fading
- With 5 bit encoding- only capital letters.
- No compression
- No file transfer

Classic Winlink- Win 3.11/Win 95 Win 98, 2000, XP

- Modules for AMTOR, CLOVER, PACTOR 1,2, and 3
- Along with VHF Packet
- Scanner function allowing multiple auto calls varying in time, frequency, mode, based upon propagation.
- Multiple forwarding paths
- With SCS proprietary modem for Pactor 2 and 3 allows automatic frequency control, automatic power level control
- Compressed and binary transfer of data

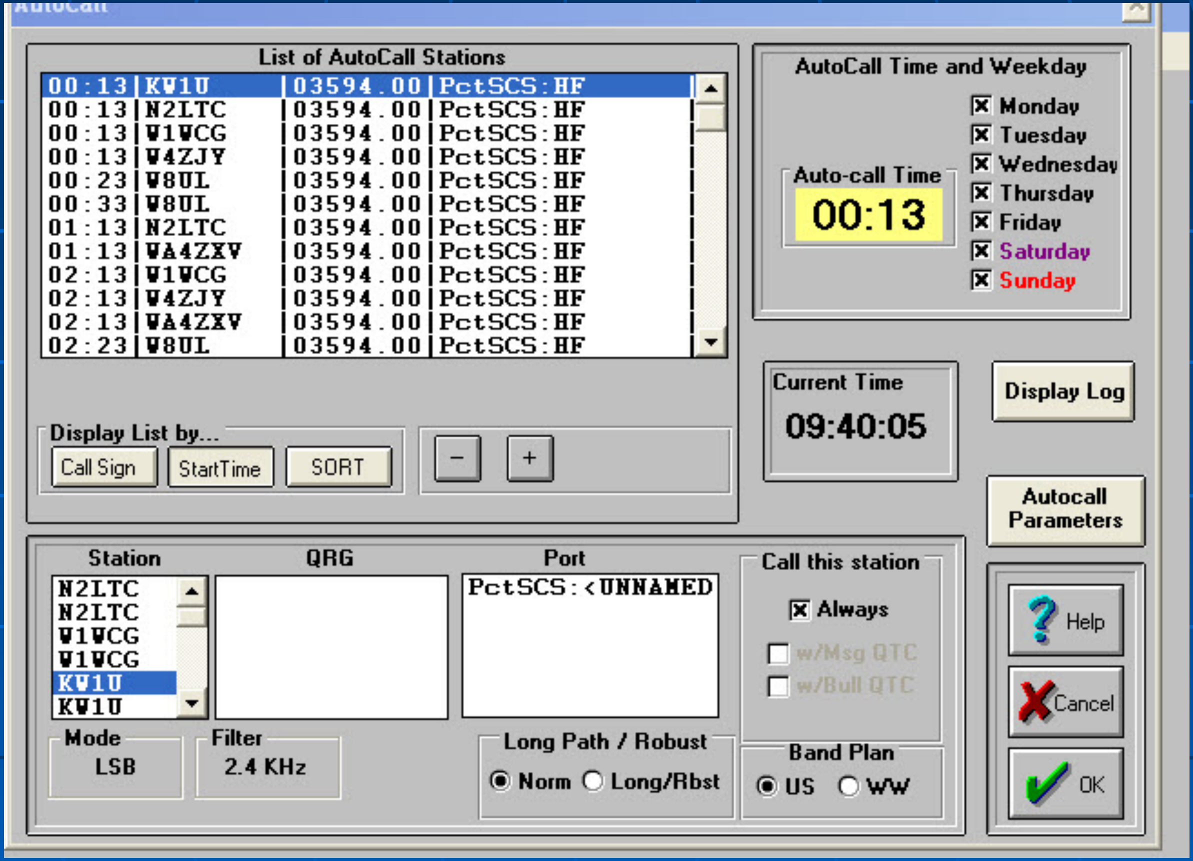
Winlink 3.0 Components

- Message Manager -Forwarding file
- User Manager
- Event Log
- PCTSCS - HF Pactor module
- PKT VHF- VHF Packet Module
- Scanner- scanning, busy detector, event scheduling and rescheduling

Typical Forwarding File

- NTSAK K4WWV W8UL KW1U
- NTSAL W5KAV K4WWV W8UL KW1U W1WCG
- NTSAB W5KAV K4WWV W8UL KW1U W1WCG
- NTSAZ W5KAV K4WWV W8UL KW1U W1WCG
- NTSAR W5KAV K4WWV W8UL KW1U
- NTSB* W5KAV K4WWV W8UL KW1U
- NTSCA W5KAV K4WWV W8UL
- NTSCO W5KAV K4WWV W8UL

Autocall



List of AutoCall Stations

```
00:13|KV1U     |03594.00|PctSCS:HF
00:13|N2LTC    |03594.00|PctSCS:HF
00:13|V1VCG    |03594.00|PctSCS:HF
00:13|V4ZJY    |03594.00|PctSCS:HF
00:23|V8UL     |03594.00|PctSCS:HF
00:33|V8UL     |03594.00|PctSCS:HF
01:13|N2LTC    |03594.00|PctSCS:HF
01:13|VA4ZXV   |03594.00|PctSCS:HF
02:13|V1VCG    |03594.00|PctSCS:HF
02:13|V4ZJY    |03594.00|PctSCS:HF
02:13|VA4ZXV   |03594.00|PctSCS:HF
02:23|V8UL     |03594.00|PctSCS:HF
```

AutoCall Time and Weekday

Auto-call Time: 00:13

- ☒ Monday
- ☒ Tuesday
- ☒ Wednesday
- ☒ Thursday
- ☒ Friday
- ☒ Saturday
- ☒ Sunday

Current Time: 09:40:05

Station:
N2LTC
N2LTC
V1VCG
V1VCG
KV1U
KV1U

QRG:

Port: PctSCS:<UNNAMED

Call this station:
☒ Always
☐ w/Msg QTC
☐ w/Bull QTC

Mode: LSB

Filter: 2.4 KHz

Long Path / Robust: ● Norm ○ Long/Rbst

Band Plan: ● US ○ WW

Winlink 2000 (aka WL2K)

- Developed by Winlink Classic Programmers in late 1990's
- Uses Pactor 1, 2, and 3, VHF/UHF Packet Sound Card Winmor module, Telnet
- Forwarding via Internet; Radio all the way via NTSD if infrastructure fails
- Radio-email and Integration of NTS NTSD and ARES
- Chapter 6 Methods and Practices Guideline (MPG)

Advantages of NTS Digital

- Available 24/7, 365 days a year
- Error Free
- Frequency, Time, Propagation Agile
- Faster
- Able to respond and adapt quicker to urgent needs like disaster messages
- Multiple redundant routing paths
- NTSD exists at and incorporates all levels of traditional NTS from TCC, through Area, Region, Section and Local .

NTSD National Messaging, Section, Region, Area

The NTS Digital (NTSD) manages a fleet of Digital Hub stations (MBOs), Target Stations and individual NTSD station operators on packet and HF PacTor radio to move NTS text Radiograms nationally. MBOs provide for uploading and downloading Radiograms by connecting stations and also forward sorted Radiograms to other MBOs for posting within range of delivery outlets.

Mail or message Box operations (MBO's)

NTSD and Pactor

- HF NTSD Operates almost exclusively in the automatic control sub-bands

3.585 - 3.600 MHz
7.100 - 7.105 MHz
10.140 - 10.150 MHz
14.095 - 14.0995 MHz
14.1005 - 14.1120 MHz

- Using Pactor 1, 2, and Pactor 3.
  - *Pactor 2 and 3 are proprietary modes.*

- All pactor connects start out at Pactor 1 and then shift up to higher speed if the equipment at both ends is compatible.

- Bandwidth for Pactor 1 and 2 is 500 Hz. pactor 3 will expand its bandwidth up to 2.4 KHz at highest speeds.

Pacific Area HUB/MBOs

K6RXX	6RN	CA	(REGION 6 HUB)
K6HTN	6RN	CA	(ALT REGION HUB)
K7EK	7RN	WA	(HF RMS, VHF/HF MBO)
K7BDU	7RN	WA	(REGION 7 HUB)
N7IE	12RN	UT	(ALT REGION 12 HUB)
W5KAV	7RN	WA	(PADC) (PACIFIC HUB)
WB6OTS	12RN	AZ	(REGION 12 HUB)
KC7ZZ	12RN	AZ	(ALT REGION 12 HUB)
VE7GN	7RN	BC	(ALT REGION 7 HUB)

Central and Eastern Area Hubs

- KW1U Massachusetts (Area Hub)
- WX4J Florida (Alt Eastern Hub)
- KB0OFD Missouri (Central Area Hub)
- W1WCG Connecticut (Alt Eastern)
- WB9FHP Indiana (Alt Central Hub)
- WB2FTX New Jersey (PADC & Hub)

W5KAV NTSD Station

HF

- ICOM 746 PRO
- SCS PTC-IIUSB Modem
- Multi band G5RV
- 6 element beam with 40 meter add-on kit
- Computer- Pentium 4 200 Ghz- Win XP
- Classic Winlink 3.0
- PK88 for packet port

VHF

FBB 7.00i BBS Software
Pentium 100 Mhz running
Linux in Ubuntu
Kantronics KPC-3 plus
Yaesu FT8100, 50 watts
Diamond dual band Vertical

Local NTS Digital

- Basic equipment requirements
  - 2M rig
  - TNC capable of 1200 baud VHF Packet
  - Terminal Program

OR

  - Soundcard interface and software capable of emulating Packet
  - Computer

Outpost Packet Message Manager

- Outpost is a Windows-based packet message client that lets you send and receive packet messages with almost any Amateur Radio Bulletin Board System (BBS) or TNC Personal Mail Box.
- Hides the complexity of the native packet environment and shorten the learning curve
- Provide an MS Windows-based packet messaging client
- Automate the packet message handling environment
- Create a program that behaves like your email client that you have at work or home…
  …create, send, receive, read, delete, reply to, or forward messages
- Automates the origination and formatting of NTS messages.
- *Focus on the message not the medium*
- *Freeware: http://www.outpostpm.org/*

WL2K Global Network to the ARES® Layer

WL2K Global Network to the ARES® Layer

The WL2K global network provides messaging in full email format allowing multiple addressees, multiple copies, and binary attachments. Addressees may include all WL2K network client accounts and public internet addressees.

All equipped ARES® stations may exchange Radio-email via WL2K on telnet/internet, or through any WL2K Gateway using packet radio, HF PacTor, or WINMOR. Routing of Radio-email traffic is fully automatic and dynamic. Any station may connect to WL2K via any connection method or location

Delivery time for such Radio-email traffic is within about ten minutes to anywhere in the world - limited primarily by the speed of the radio connections at the upload and download points. Once a message is posted on the CMS it is available for download in short order.

Email traffic is compressed using the B2F protocol to reduce spectrum use and to enhance privacy.

WL2K Global Network to the ARES® Layer

All ARES®/NTS stations within Section "last mile" infrastructure loss situations can exchange email between their stations via RMS-Packet Gateways, with RMS-Relay installed, without the use of the local ground infrastructure (i.e., without telephone or ISP connections to the stations or the Gateway). Thus local emergency Radio-email traffic can be handled in spite of total infrastructure loss. Radio-email going to/from outside this local domain may be passed via the HF PacTor connection of the RMS-Relay module to any WL2K HF Gateway station, Target Station in the county.

HF PacTor Gateways may also use RMS-Relay.

WL2K Global Network to the ARES® Layer

All ARES®/NTS stations within Section "last mile" infrastructure loss situations can connect to the WL2K network via packet, HF PacTor, or WINMOR, Gateways via numerous operating Gateways throughout the country with available infrastructure.

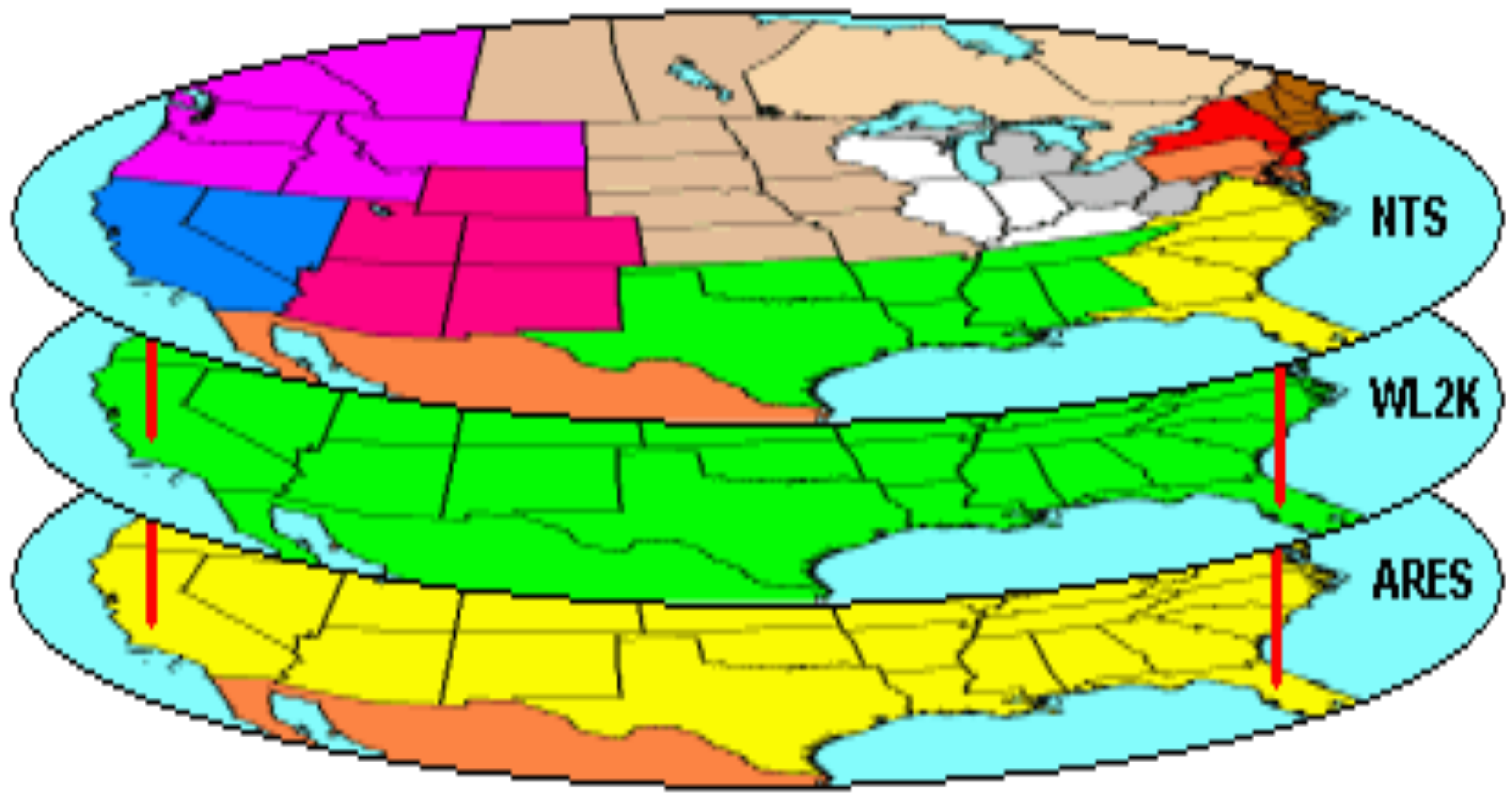
Don't fall asleep now we are not to the good part

WL2K Global Network to the ARES® Layer

All ARES®/NTS/NTSD stations in the Section's "last mile" can pass Radio-email directly between their stations using AirMail or RMS-Express client software using packet, HF PacTor, or WINMOR, and may likewise use this peer-to-peer mode to pass Radio-email to properly equipped stations throughout the NTS/NTSD and ARES® stations in other Sections.

Officials at served agencies may send emails via amateur radio from their own computers linked to ARES®/NTS/NTSD WL2K stations on site. Both the AirMail and the Paclink clients have built-in servers to interface with external email applications connected via in-house Ethernet or other networking including WiFi and IR.

ARES® and NTS/NTSD Sharing the WL2K Layer



ARES® and NTS/NTSD Sharing the WL2K Layer

The addition of the WL2K Radio-email layer for NTS/NTSD stations enables all ARES®, NTS and NTSD stations to intercommunicate on a common network.

All ARRL Field Organization stations providing emergency communications may work together as one team to achieve total served-agency and public interoperability. This includes properly equipped ARESMAT deployments anywhere in the country.

All served agency and public email messages may be delivered automatically to the addressee's server anywhere including to those on the public internet via a protective firewall and spam filter (white list).

ARES® and NTS/NTSD Sharing the WL2K Layer

Sheltered public victims may originate Radio-email through an ARES®/NTS WL2K station to loved one's internet addresses outside the "last mile" for automatic delivery and replies.

Sheltered public victims not prepared to provide email addresses for loved ones may originate ARRL text Radiograms or Radio-email traffic which may be forwarded via WL2K to the stations of the NTS/NTSD for distribution and delivery (see the next section below).

Any field station using a basic text editor may prepare Batch Files containing multiple NTS Radiogram messages.

ARES® and NTS/NTSD Sharing the WL2K Layer

Batch files in the stipulated format may be sent via WL2K to NTS/NTSD stations and may be directly imported into the NTSD MBO system for distribution and delivery. NTSD stations may likewise export sorted Batch Files of NTS Radiograms which may be moved via WL2K to other MBOs or directly to Section outlets anywhere in the US.

Batch files are files with multiple messages

Included within them, they can have 2, 10 or 50 or more.

ARES® and NTS/NTSD Sharing the WL2K Layer

In areas of the country outside the "last mile" large volumes of NTS radiogram traffic and Radio-email traffic may be transferred between NTSD MBO stations or Target Stations via HF, or VHF along with telnet/internet connections to the WL2K network.

Remember you do not need the internet to connect to a NTSD MBO or Target Stations or RMS.

If needed you can connect point to point to another station using any of the WL2K software or Airmail.

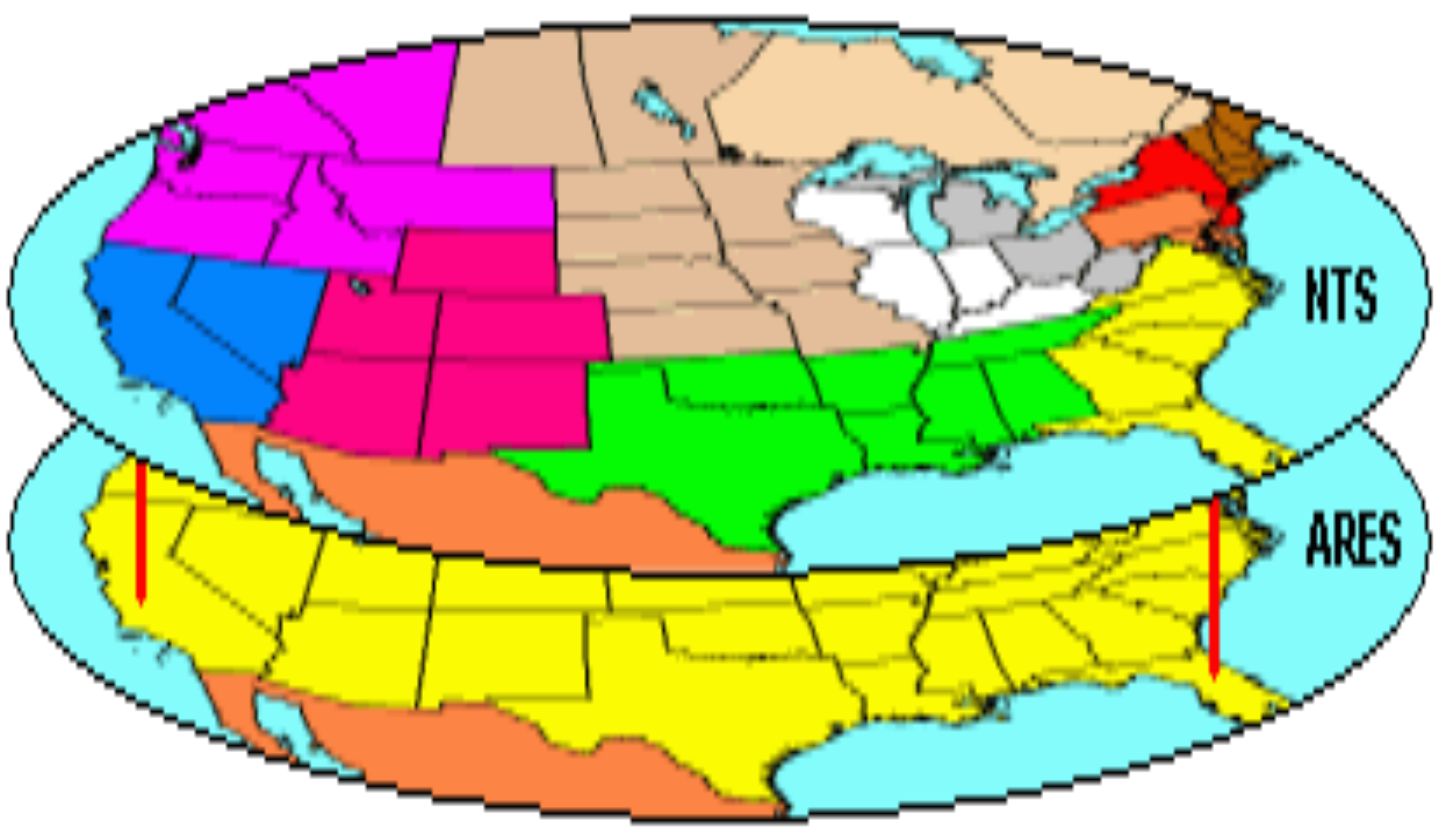
The WL2K network uses the internet for message forwarding where available. This is a sensible choice to take advantage of the speed of the internet as well as to reduce spectrum loading during emergencies. Radio backup in depth is available as shown in the next sections below.

ARES® and NTS/NTSD Sharing the WL2K Layer

All ARES® and NTS Radio-email traffic from the amateur staff as well as from served officials may be moved within and outside of the "last mile" to addressees without the use of any intermediate amateur relaying manpower.

Thus the bridge between ARES®, NTS and the NTSD has been established to greatly integrate the operations of the entire Field Organization.

Total Infrastructure-Loss Radio-Email Messaging



Total Infrastructure-Loss Radio-Email Messaging

In the very unlikely event of total national internet loss, or the inability to access WL2K in a given area, the means has been developed within the NTS/NTSD to transfer Radio-email manually, nation-wide. The WL2K Via AirMail and RMS-Express client software permits *station-to-station transfers and intermediate station relays of email formatted message traffic "without any use of the internet over" VHF, UHF and HF.*

Total Infrastructure-Loss Radio-Email Messaging

All ARES® and NTS/NTSD stations equipped with AirMail or RMS-Express may use packet, HF PacTor, or HF WINMOR to directly exchange Radio-email messaging using full email format as well as carrying NTS Radiograms (attached as Batch Files). The NTSD has deployed this capability (2011-2012).

The direct transfer of Radio-email traffic via packet or HF radio permits handling emergency communications messaging totally independent of the infrastructure and the WL2K system if necessary.

Total Infrastructure-Loss Radio-Email Messaging

Direct transfers of Radio-email traffic may be accomplished until a receiving station has the capability to re-file the Radio-email, including NTSD Batch Files carried by Radio-email, onto the WL2K network, the NTSD MBO, or the public internet.

- The current resources of the manual NTS system and NTSD shall be preserved as a fundamental backup system for national messaging.

Total Infrastructure-Loss Radio-Email Messaging

For the first time the ARES®/NTS/NTSD team can now move messages in full email format, as well as NTS text message format, anywhere in the country within minutes. This can be done via the WL2K network or radio-all-the-way directly by the fleet of properly equipped ARES®/NTS/NTSD stations. The delivery of text Radiogram traffic still depends upon NTS and ARES® stations in the destination Section.

PROTOCOLS

See the MPG Chapter 6 and the Plain Text and Batch File support documents posted on this site for the methods used for establishing Target Stations, preparing Radiogram Batch Files for direct submission to the NTSD, and the Types of Radio-email developed for securing the bridge between ARES®, NTS and NTSD for all emergency communications.

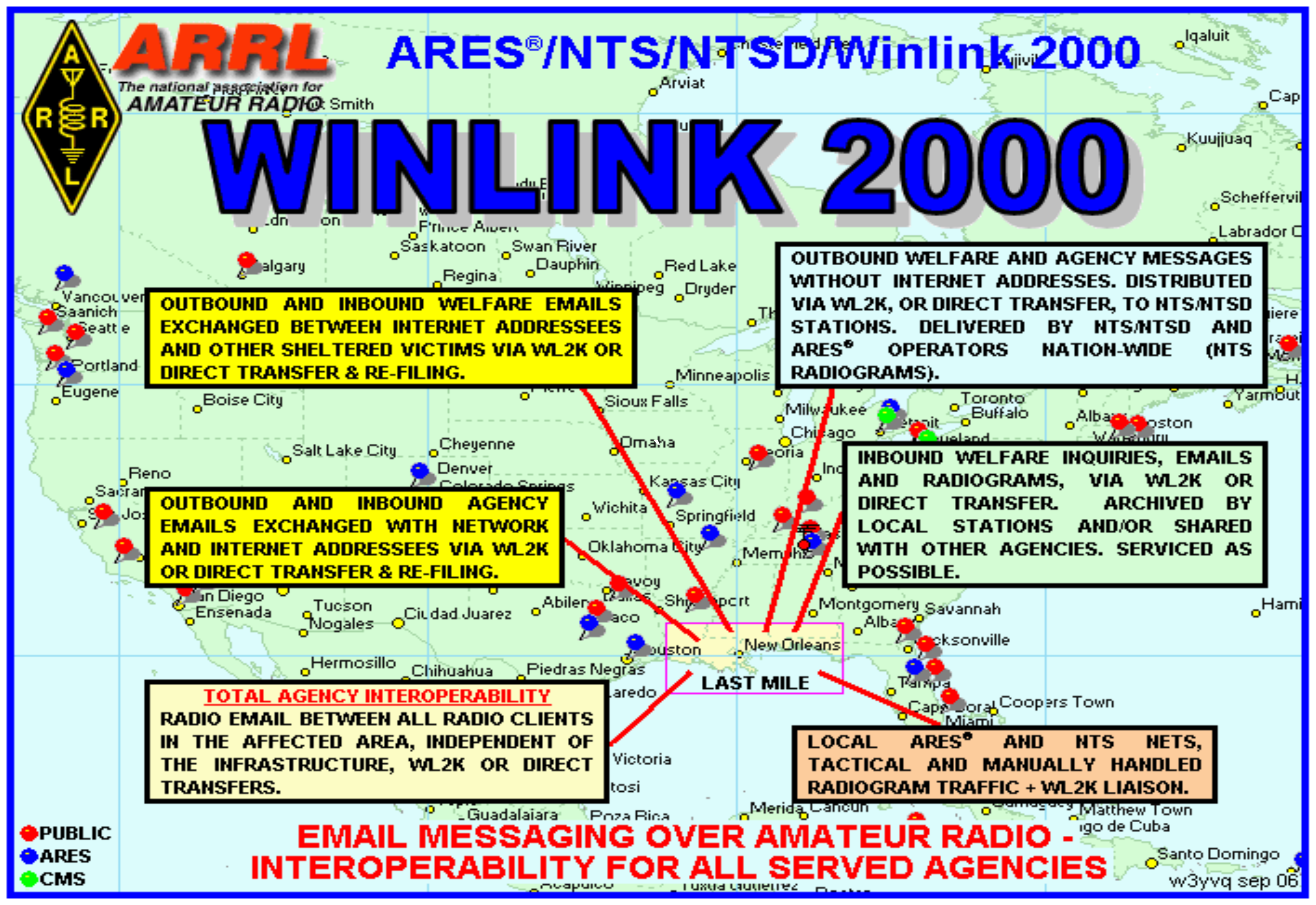
The objective of the integration of ARES®, NTS and NTSD in this manner is to provide for total agency interoperability nation-wide.

http://wx4j.com/MPG6_NTSD_RADIOEMAIL.htm

PROTOCOLS

Since these protocols apply nation-wide, common software and hardware may be used in all Sections, and throughout the NTS and NTSD they may be used for the exchange of Radio-email and Radiogram traffic in full cooperation with ARES®. Likewise, this commonality of software and hardware makes it much more efficient for ARESMAT deployment anywhere in the U. S. ARESMAT may also establish Gateway services ad-hoc anywhere including those operating RMS-Relay for local automatic Radio-email service. Radio-email gives ARESMAT the ready means to stay in contact with their home jurisdictions.

SUMMARY SLIDE



ARRL

The national association for AMATEUR RADIO

ARES®/NTS/NTSD/Winlink 2000

WINLINK 2000

OUTBOUND AND INBOUND WELFARE EMAILS EXCHANGED BETWEEN INTERNET ADDRESSEES AND OTHER SHELTERED VICTIMS VIA WL2K OR DIRECT TRANSFER & RE-FILING.

OUTBOUND WELFARE AND AGENCY MESSAGES WITHOUT INTERNET ADDRESSES. DISTRIBUTED VIA WL2K, OR DIRECT TRANSFER, TO NTS/NTSD STATIONS. DELIVERED BY NTS/NTSD AND ARES® OPERATORS NATION-WIDE (NTS RADIOGRAMS).

OUTBOUND AND INBOUND AGENCY EMAILS EXCHANGED WITH NETWORK AND INTERNET ADDRESSEES VIA WL2K OR DIRECT TRANSFER & RE-FILING.

INBOUND WELFARE INQUIRIES, EMAILS AND RADIOGRAMS, VIA WL2K OR DIRECT TRANSFER. ARCHIVED BY LOCAL STATIONS AND/OR SHARED WITH OTHER AGENCIES. SERVICED AS POSSIBLE.

LAST MILE

TOTAL AGENCY INTEROPERABILITY

RADIO EMAIL BETWEEN ALL RADIO CLIENTS IN THE AFFECTED AREA, INDEPENDENT OF THE INFRASTRUCTURE, WL2K OR DIRECT TRANSFERS.

LOCAL ARES® AND NTS NETS, TACTICAL AND MANUALLY HANDLED RADIOGRAM TRAFFIC + WL2K LIAISON.

- 🔴 PUBLIC
- 🔵 ARES
- 🟢 CMS

EMAIL MESSAGING OVER AMATEUR RADIO - INTEROPERABILITY FOR ALL SERVED AGENCIES

w3yvq sep 06

ARRL, ARES, NTS & NTSD Digital Contacts

ARES WWA SEC Frank Wolfe NM7R
ARES EWA SEC Gordon Grove WA7LNC

WWA Section Traffic Manager -NTS
Bill Frazier
EWA Section Traffic Manager -NTS
W7ARC Donald L. Felgenhauer K7BFL

Chuck Verdon W5KAV
Pacific Area Digital Coordinator- NTSD

Additional Resources

ARRL Net Directory – Excellent NTS reference with net listings by state ($5 from ARRL). Online version is accessible free at the ARRL web site (www.arrl.org).

Public Service Communication Manual – Detailed reference on NTS message handling available on ARRL web site.

WX4J web Site

http://wx4j.com/MPG6_NTSD_RADIOEMAIL.htm

http://wx4j.com/BTHV1201.htm

Acknowlegements

- **Pinkney Foster, KG6ILA,** Section Traffic Manager ARRL Santa Clara Valley Section kg6ila@arrl.net whose presentation "*National Traffic System (NTS) Messaging Basics*" inspired the message handling components of this presentation.
- **Jim Oberhofer, KN6PE,** author of Outpost Packet Message Manager, and the resulting description included in this presentation.
- **Al Nollmeyer, W3YVQ** Chair ARRL NTS Winlink Committee, STM Maryland, one of the authors ARRL guidelines and practices and the ARRL PSCM
- **Dave Struebel, WB2FTX** Section Traffic Manager for Northern NJ. Eastern Area Digital Coordinator for NTS Digital. NTS Digital Hub Eastern Area and TCC functions

Questions?

ICS 213 General Message Form

Background

The ICS 213 General Message Form began as a multipart self-copying form for use as an interoffice memo. The layout and use of the 213 form has changed significantly since its inception. The 213 has become the basic written communications document between all areas of emergency response. Users are often located at separate locations and use the 213 form to communicate real time events.

ICS213 General Message Form

Messages originate at one location, are transmitted to another site, and a response may be returned to the originator. The reply message can be combined with the original message for the convenience of the Originator.

The format of the 213 message form is specified by the served agency. Just as the Incident Command System is adaptable to various incidents, the methods of communications are matched to the situation.

ICS213 General Message Form

The 213 message form may be transmitted by voice, digital, or even hand carried to get the job done.

The form 213 can be found at the FEMA ICS Resource Center website at:

http://training.fema.gov/EMIWeb/IS/ICSResource/ICSResCntr_Forms.htm

The form 213 is specified by the Served Agency.

ICS213 General Message From

ARES Role

The ARES communications volunteer is committed to accurately, rapidly handling information for the benefit of the served agency. ARES operators rely on their equipment, training, and ingenuity in meeting the demands of served agency communications.

ARES members must keep abreast of new applications

and techniques in emergency communications. ARES role in emergency communications is to move information from point A to point B at the request of the Served Agency. ARES volunteers perform this task using communications procedures developed to provide accurate rapid emergency communications

ICS213 General Message Form

Let’s take a closer look at each of the message elements.

HEADER

The information in both the TO: and FROM: lines must contain sufficient information to deliver the message. Obviously this will include the Name, Location, and Title or Position, for each party.

An example TO: line would look like this:

TO: Ralph Schmitz Shelter East Shelter Manager

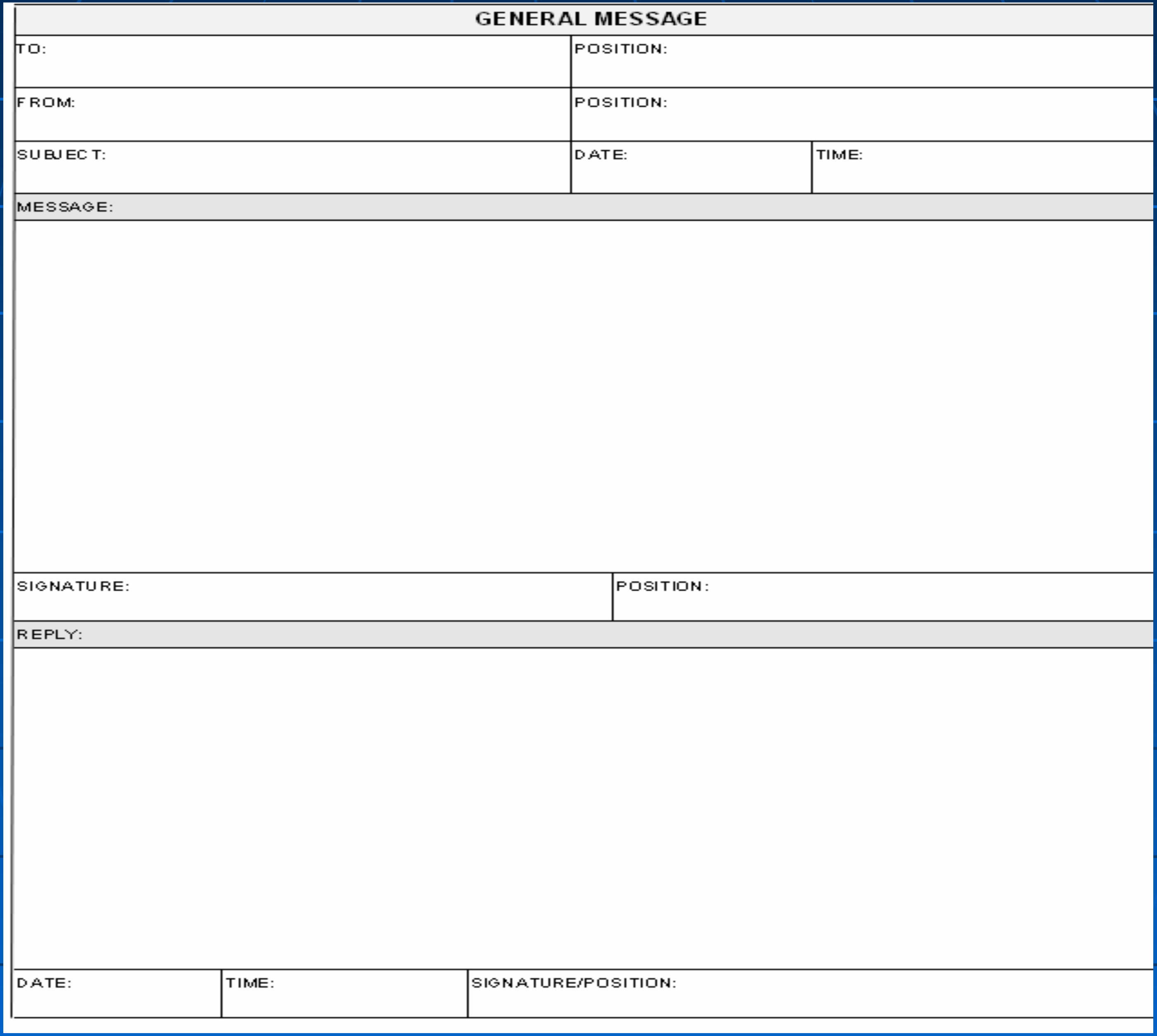
ICS213 General Message Form

FROM: line would look like this:

FROM: Carl Flackscheid EOC Commander

The subject line is a concise title for the message that highlights the important point of the message

ICS 213 General Message Form



GENERAL MESSAGE

TO:

POSITION:

FROM:

POSITION:

SUBJECT:

DATE:

TIME:

MESSAGE:

SIGNATURE:

POSITION:

REPLY:

DATE:

TIME:

SIGNATURE/POSITION:

ICS213 General Message Form

A SUBJECT Line might read as follows:

SUBJECT: SITREP Request

The person originating the message will complete the HEADER information and the MESSAGE TEXT. You may be given verbal instructions to “Send a message to X telling them . . . . “.

You will then fill out the 213 form, get the message okayed by the originator and send the message

ICS213 General Message Form

A SUBJECT Line might read as follows:

SUBJECT: SITREP Request

The person originating the message will complete the HEADER information and the MESSAGE TEXT. You may be given verbal instructions to “Send a message to X telling them . . . . “.

You will then fill out the 213 form, get the message okayed by the originator and send the message

ICS General Message Form

MESSAGE TEXT

The message text area contains the information to be transmitted. The message should be concise with non-essential words eliminated.

Be direct and to the point.

ICS213 General Message Form

Punctuation in the message is indicated with the word X-Ray. Punctuation, such as commas, parens, question marks are generally not essential to the information and should not be used. Do not end the message text with an X-Ray. Each word or group of numbers in the text is counted as one word. The sending station can do many things to clarify the "words" in the text when sending the message. We will look at these techniques when sending a sample message. The message text area is defined during message transmission by the proword BREAK immediately before the first word of the text and immediately following the last word of the text.

ICS213 General Message Form

SIGNATURE

This identifies the sender of the message (or reply) and should contain enough information to locate the sender if a reply is received.

ICS213 General Message Form

REPLY

The reply message follows the same guidelines as the Message Text.

Note: The reply message should reference the message number of the original message.

This allows the receiving station to match the reply with the original message.

ICS213 General Message Form

Completing The 213

PREAMBLE

The basic 213 form does not contain the pre-printed 'Radiogram' format for the preamble.

The trained ARES operator *writes the preamble items on the top margin of the 213 form*. Sending the 213 form begins with the same preamble used in the NTS format.

ICS213 General Message Form

No. precedence HX Origin Stn chk Place of Origin Time Date

32 routine hxe kc0hse 16 Eagle shelter 1210 23 jun

To: Izzy Bagodonuts EOC Postion Red Cross Mass Care

From: Claire daylight Eagle shelter Postion shelter manager

Subject: Additional clients Date: 23 Jun Time: 1200

TEXT

45 CLIENTS ARRIVING 1500HRS. X NEED 45 ADDITIONAL MEALS COTS BLANKETS CARE KITS X REPLY WITH ETA

Signature: Claire daylight eagle Postion: shelter manager

ICS213 General Message Form

Transmitting the Form 213 Message

You begin with the phrase,

This is Eagle Shelter, MESSAGE FOLLOWS. Then start with the preamble:

Message follows number Three Four, Routine,   Hotel Xray Echo,

Callsign KC0HSE, I SPELL Kilo Charlie Zero Hotel Sierra Echo,

Figures,one six,

From: Eagle Shelter,

Figures one two one zero, figures two three June.

(unkey your mic to give the receiving station the chance to catch up.)

ICS213 General Message Form

TO: Izzy, I SPELL India Zulu Zulu Yankee Izzy,

Bagodonuts, I SPELL Bravo Alpha Gulf Oscar Delta Oscar November Uniform Tango Sierra, Bagodonuts, EOC, Red Cross Mass Care

FROM: Claire, I SPELL Charlie Lima Alpha India Romeo Echo, Claire, Daylight, I SPELL Delta Alpha Yankee Lima India Gulf Hotel Tango, Daylight, Eagle Shelter, Shelter Manager.

Additional Clients, FIGURES Two Three June, FIGURES one two zero zero

BREAK

(unkey your mic to give the receiving station a chance to catch up)

ICS213 General Message Form

TEXT

BREAK

Figures four five clients arriving Figures one five zero zero Hotel Romeo Sierra XRAY need Figures four five additional meals cots blankets care kits XRAY reply

with I Spell Echo Tango Alpha

BREAK

(unkey giving the receiving station a chance to catch up)

ICS213 General Message Form

Signed: Claire Daylight Eagle shelter Manager

BREAK no more OVER

You do not need to spell the signature phonetically because you sent that information as part of the TO line.

Hopefully, the receiving station responds after a short delay by saying, “N0ZGE ROGER OUT.”

ICS213 General Message Form

The reply message has it’s own preamble. The reply is treated as a new message originated by the station sending the reply.

The message number would be the serial number assigned by the station entering the reply message into the radio net.

The remaining items in the preamble: Precedence, Instructions – if any, Originating station, Check – words in the Reply text, Place of origin, Time Date, all apply to the sending station.

ICS213 General Message Form

The Header: To, From, Subject, Date, Time will be found on the original message.

The To and From lines will probably be reversed to show the sender and receiver of the reply message.

The Subject contains the addition of the message number of the original message to allow the receiving station to match the reply to the original message.

The message text and signature follow the same guides as the original outgoing message.

ICS213 General message Form

Note there are a couple of small changes in procedure in transmitting a reply message. You alert the receiving station by starting with the phrase REPLY FOLLOWS. The receiving station now is ready for the additional information in the Subject line of the message.

The subject line of the original message was “Additional Clients”

The subject line of the reply message is

“REPLY Additional clients MSG32”

This provides the receiving operator with the subject and message number of the original message.

ICS213 General Message Form

Finally

Remember, personnel may be changing at locations on a rotating shift schedule. A message request for anything may have to be passed onto another shift before the reply message arrives.

Providing a copy of the original message provides the current shelter manager with the whole story.

ICS213 General Message Form

Questions ?